APPENDIX "C"

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Webster's Third New International Dictionary

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6 [by shortening] : COUNTERTENOR 7 : CONTRARY, OPPOSITE (promising the ~) (believing the ~ of what was said) 8 : an agency, move, or force that offsets, checks, neutralizes, or otherwise acts in opposition : ANSWER, REJOINDER, PARRY, CHECK, DEFENSE (this salutary ~ to the baleful influence of our philosophical extremists —J.A.Mourant) (the dramatic ~ to an unexpected thrust —E.M.Lustgarten) (a football formation used as a ~ to an overshifted defense) 9 a : CROSS LOCK b [by shortening] : COUNTERSHAFT c [by shortening] : COUNTERSEAL 10 a : any of the areas in the faces of printing type that are less than type high and enclosed by the strokes of the letter — *see* TYPE illustration b : the matching counterpart of a die (sense 9b(1)), usu. of softer and less permanent material — called *also force* 11 : 3-lobed school skating figure performed on either edge and either forward or backward in which the skater executes a turn at each junction of the three lobes against the natural rotation of the curve being skated and remains on the same edge throughout — compare ROCKER

²coun·ter \"\ *adj* [*counter*] 1 : marked by or tending toward an opposite direction, motion, or effect : OPPOSED, CONTRARY: a : moving in an opposite direction (a ship slowed down by ~ tides) b : serving to answer, check, offset, or challenge the action of another (as an opponent) : RETALIATORY (a tally of the tongue may invite a ~ sally of the fists —V.L.Parrington) (the westward expansion of the southern slave power in search of unexhausted land, or the ~ expansion of the free soil movement —Ellen Semple) c : given to or marked by opposition, hostility, or antipathy (from being current with his times and his fellow men he tended to become ~ —H.S. Canby) d : situated opposite : lying opposite (and clambered halfway up the ~ side —Alfred Teanyson) e : NULLIFYING, COUNTERMANDING (~ orders from the colonel) 2 : duplicate and serving as a tally or check (a ~ list) syn see ADVERSE

³coun·ter \"\ *vt* -ED/-ING/-S [*²counter*] : to furnish with a counter (*~ing* a shoe)

counter- *prefix* [ME *countre-*, fr. MF *contre-*, *contre* — more at COUNTER (adv.)] 1 a : contrary : opposite : adverse (*counter*current) (*counter*order) b : opposing : retaliatory : answering (*counter*blow) (*counter*weapon) 2 : complementary : corresponding : alternate (*counter*weight) (*counter*part) (*counter*theme) 3 : duplicate : substitute (*counter*foil)

coun·ter-act \ˌkaunt(ə)ˈakt\ *vt* -ED/-ING/-S [*counter-* + *act*] : to act in opposition to : make ineffective by opposite force : mitigate ill effects of : CHECK, OFFSET, NEUTRALIZE, NULLIFY (the spontaneous physiological processes which ~ disease before medical science comes into play —Havelock Ellis) syn see NEUTRALIZE

coun·ter-ac·tant \-ˈtənt, -ᵊntˈ\ *adj* : COUNTERACTING

coun·ter-act-ing-ly *adv* : in a counteracting manner

coun·ter-action \ˈkauntər+\ *n* -S 1 : contrary action : OPPOSITION, RESISTANCE (scheming ~) 2 : act or action of counteracting : a counteracting agency (the ~ of centripetal forces on centrifugal tendencies)

¹coun·ter-active \"+\ *adj* [*counteract* + *-ive*] : tending to counteract syn see ADVERSE

²counteractive \"\ *n* -S : a counteractive agency

coun·ter-agent \ˈkauntər+\ *n* [*counter-* + *agent*] : one that counteracts

coun·ter-approach \"+\ *n* [trans. of F *contre-approches*] : approaches (sense 4b) advanced from defensive works to meet hostile approaches

¹coun·ter-arch \"+\ *n* [*counter-* + *arch*] : an opposite and strengthening arch

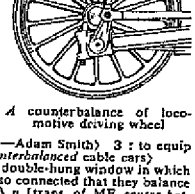
²counterarch \ˌkauntər+\ *vt* : to supply with a counterarch

counterargument \"+\ *n* [*counter-* + *argument*] : an opposing or answering argument

¹counter-attack \ˈkauntər+\ *n* [*counter-* + *attack*] 1 : an attack against an enemy attacking force usu. with limited tactical objectives (as to regain a key position) — compare COUNTEROFFENSIVE 2 : an aggressive action in defense : an attack on one attacking (a ~ on his detractors)

²counterattack \ˌ=ə+\ *vt* : to make a counterattack : attack in reprisal or retaliation (the defenders have *counter*attacked with the charges that the critics themselves are fascist —Paul Woodring) ~ *vt* : to make a counterattack against

¹coun·ter-balance \ˈkauntə(r)+\ *n* [*counter-* + *balance*] 1 : a weight that balances another : COUNTERPOISE 2 : an agency, force, or power that balances, offsets, checks, or neutralizes an opposing force (his chary caution secving as a ~ to her impetuousness)



A counterbalance of locomotive driving wheel

²counterbalance \ˌ=ə+\ *vt* 1 : to serve as a counterbalance to : oppose with an equal weight : BALANCE, COUNTERPOISE, COUNTERVAIL (the inward thrust is *counterbalanced* by the outer) 2 : to oppose with equal force or significance : CHECK, OFFSET, NEUTRALIZE, BALANCE, COMPENSATE (those two opposite causes seem to ~ one another —Adam Smith) 3 : to equip with counterbalances (two *counterbalanced* cable cars)

counterbalanced window *n* : a double-hung window in which the upper and lower sashes are so connected that they balance

coun·ter-battery \ˈkauntə(r)+\ *n* [trans. of MF *contre-batterie*] : artillery fire directed against enemy artillery (guns assigned to a ~ mission)

coun·ter-blast \"+\ *n* [*counter-* + *blast*] : a check, offset, balance, or counteraction marked by strength, vigor, explosiveness, and lack of restraint (the secretary's tirade drew a ~ from the opposition leader)

coun·ter-blow \"+\ *n* [*counter-* + *blow*] : a return blow : a reprisal measure : RETALIATION (the ~ delivered against the aggressor —*Soviet Russia Today*)

¹coun·ter-bore \ˈkauntə(r)+\ *vt* [*counter-* + *bore*] : to form a counterbore in : enlarge (part of a hole) by means of a counterbore

²counterbore \ˈ=ə+ˌ-\ *n* 1 : a flat-bottomed enlargement of the mouth of a cylindrical bore 2 : a drill for making a counterbore — compare COUNTERSINK

coun·ter-boy \ˈkauntə(r)+ˌ-\ *n* [*counter* + *boy*] : a boy who does the work of a counterman

¹coun·ter-brace \ˈkauntə(r)+\ *n* [*counter-* + *brace*] : a brace counteracting the strain of another brace: a : the brace of the fore-topsail on the leeward side of a ship b : ²COUNTER 4c

²counterbrace \ˌ=ə+\ *vb* [*counter-* + *brace*] : to brace in opposite directions (~ a ship's yards); *also* : to brace so that opposite stresses are resisted

coun·ter-brand \ˈkauntə(r)+ˌ-\ *n* [*counter-* + *brand*] : a brand put on cattle to supersede a previous brand

¹counterbuff *n* [*counter-* + *buff*] *obs* : COUNTERBLOW, REBUFF

²counterbuff *vt*, *archaic* : to strike back at : REBUFF

counter card *n* [*²counter*] : an advertising placard for use on or in a store counter

countercast *n* -S [*counter-* + *cast*] *obs* : an antagonistic trick or artifice

counterceaster *n* -S [*²counter* (piece used in keeping account) + *caster*] *obs* : a reckoner of accounts : BOOKKEEPER

coun·ter·cathexis \ˌkauntə(r)+\ *n*, *pl* **counterca·thexes** [*counter-* + *cathexis*] : the act by the ego of blocking from consciousness objectionable notions and impulses of the id

¹com·ter-change \ˈ=ə+ˌ-\ *n* [part trans. of MF *contrechange*, fr. *contre-* counter- + *change* exchange change — more at CHANGE] 1 *obs* : EXCHANGE, RECIPROCATION, ALTERNATION 2 : the contrast of a dark area against a light ground with a light area against a dark ground in a painting

²counterchange \ˌ=ə+\ *vt* [part trans. of MF *contrechanger*, fr. *contrechange*, n.] 1 : to cause to change places or characteristics : SHIFT, TRANSPOSE 2 : to make checkered (as with contrasting colors) (elms that ~ the floor of this flat lawn with dusk and bright —Alfred Tennyson) 3 *heraldry* a : to depict (charges or a charge borne on a party or varied field) in the tincture of the opposite part of the field from that on which each charge or each part of a charge lies b : to reverse the two tinctures of (a varied field) on the opposite sides of a line of partition

counterchanged *adj* 1 *heraldry* : each one or each part having the tincture of the opposite portion of the field — used of charges or a charge borne so as to lie on both tinctures of a party or varied field 2 *heraldry* : having the two tinctures reversed on the opposite sides of a line of partition — used of a varied field

¹coun·ter-charge \ˈkauntə(r)+\ *vt* [*counter-* + *charge*] : to charge in opposition, contradiction, or reply

²counter-charge \ˈ=ə+ˌ-\ *n* : an opposing or retaliatory charge

¹coun·ter-check \ˈkauntə(r)+ˌ-\ *n* [*counter-* + *check* (n.)] 1 *obs* : a rebuke in answer to another 2 : a check or restraint often operating against something that itself exercises a restraining force

²countercheck \ˌ=ə+\ *vt* [*counter-* + *check* (v.)] 1 : CHECK, COUNTERACT 2 : to check a second time for verification

counter check *n* [*counter*] : a blank check obtainable at a bank esp. to be cashed only at the bunk by the drawer

¹coun·ter-claim \ˈkauntə(r)+\ *n* [*counter-* + *claim* (n.)] : an opposing claim; *esp* : a law claim of matter constituting a distinct cause of action made by a defendant in an action as an offset to a claim made on him and distinct from his defense, being in effect a distinct action that is sometimes allowed to be brought in order to reduce amount and cost of litigation

²counterclaim \ˌ=ə+\ *vb* [*counter-* + *claim* (v.)] *vi* : to enter or plead a counterclaim — *vt* : to ask in a counterclaim

¹coun·ter-clockwise \ˈkauntə(r)+\ *adv* [*counter-* + *clockwise*] : in a direction opposite to that in which the hands of a clock rotate : from horizontal left down or nearer and then upwards to horizontal right — opposed to *clockwise*

²counterclockwise \"\ *adj* : moving or directed counterclockwise : LEFTHANDED, LEVOROTATORY

coun·ter-colored \ˈkauntə(r)+\ *adj* [*counter-* + *colored*] *heraldry* : COUNTERCHANGED

coun·ter-com·po·ny \ˈkauntə(r)kəmˈpōnē\ *adj* [trans. of F *contre-componé*] *heraldry* : composed of a double row of small squares of alternating tinctures

coun·ter-couchant \"+\ *adj* [*counter-* + *couchant*] *heraldry* : couchant with heads in opposite directions

coun·ter-courant \"+\ *adj* [*counter-* + *courant*] *heraldry* : running in opposite directions (two stags ~)

coun·ter-cry \ˈkauntə(r) +ˌ-\ *n* [*counter-* + *cry*] : an answering cry (cries of "Espionage" and *countercries* of "Nonsense" —*Time*)

¹coun·ter-current \ˈkauntə(r) +ˌ-\ *n* [*counter-* + *current* (n.)] : a current flowing in a direction opposite to that of another one (an oceanic ~)

²countercurrent \ˌ=ə+\ *adj* [*counter-* + *current* (adj.)] 1 : flowing in an opposite direction 2 : involving flow of materials in opposite directions (acetylene dissolved by ~ treatment with water)

countercurrent \ˌ=ə+\ *or* **coun·ter-currently** \"+\ *adv* : in a direction opposite to that in which something else is flowing (a gas passed ~ to a fluid running through a tube)

coun·ter-cyclical \ˈkauntə(r)+\ *adj* [*counter-* + *cyclical*] : calculated to check excessive developments in a business cycle : COMPENSATORY (~ budget policies of the government)

coun·ter-dike \ˈ=ə+ˌ-\ *n* [*counter-* + *dike*] : a second or reserve dike

¹coun·ter-disengage \ˌ=ə+\ *vi* [*counter-* + *disengage*] *fencing* : to disengage into the previous line and at the moment when one's adversary disengages — **coun·ter-disengagement** \"+\ *n* -S

²coun·ter-disengage \ˈkauntə(r)+\ *n* : the act of counterdisengaging

coun·ter-earth \ˈkauntər+ˌ-\ *n* [*counter-* + *earth*; trans. of Gk *antichthōn*] : a planet supposed in Pythagoreanism to accompany the earth in its revolutions and to shield it from the fire at the center of the universe

countered *past of* COUNTER

counter electromotive force *n* [*²counter*] : the electromotive force that develops in some circuits from chemical or magnetic effects of the current and that opposes the impressed electromotive force producing the current — called also *back electromotive force*

coun·ter-embattled \ˈkauntər+\ *adj* [*counter-* + *embattled*] *heraldry* : embattled on opposite sides with the battlement or merlon on one side opposed to the embrasure on the other

coun·ter-embowed \"+\ *adj* [*counter-* + *embowed*] *heraldry* : bent or curved one to the dexter and the other to the sinister

¹coun·ter-enamel \ˈkauntər+\ *n* [*counter-* + *enamel* (n.); trans. of F *contre-émail*] : enamal on the reverse side of an enameled plate, plaque, or shield

²counterenamel \ˌ=ə+\ *vt* [*counter-* + *enamel* (v.); trans. of F *contre-émailler*] : to enamel on the reverse side

coun·ter-espionage \ˈkauntər+\ *n* [*counter-* + *espionage*; part trans. of F *contre-espionnage*] : the activity concerned with the discovery and defeat of enemy espionage

¹coun·ter-etch \ˈkauntər+\ *vt* [*counter-* + *etch*] : to clean (a lithographic plate) with dilute acid solution

²counteretch \ˌ=ə+ˌ-\ *n* : the cleaning (as of a lithographic plate) by counteretching; *also* : the solution used for such cleaning

coun·ter-exposition \ˌkauntər+\ *n* [*counter-* + *exposition*] : a secondary exposition of a musical fugue with the subject and answer usu. in reverse order

¹coun·ter-factual \ˈkauntə(r)+\ *adj* [*counter-* + *factual*] : contrary to fact — **coun·ter-factually** \"+\ *adv*

²counterfactual \"+\ *n* -S : a logical conditional whose antecedent is or is presumed to be contrary to fact (as *if he had come*)

coun·ter-faller \ˈkauntə(r)+ˌ-\ *n* -S [*counter-* + *faller*] : a wire-drawing spinning mule that lifts the yarn when it is not depressed by faller so as to keep tension uniform

counterfeisance *n* -S [part trans. of MF *contrefaisance*, fr. *contrefaisant*, pres. part. of *contrefaire* to imitate — more at COUNTERFEIT] *obs* : COUNTERFEITING, IMPOSTURE

¹coun·ter-feit \ˈkauntə(r),fit, *usu* -id-+V; *Brit also* -ˌfēt\ *vb* -ED/-ING/-S [ME *countrefeten*, fr. MF *contrefait*, past part.] *vt* 1 *obs* : IMPERSONATE 2 : to put on the false appearance of : FEIGN, SIMULATE (~ sorrow and mask inward glee) 3 a : to endeavor or succeed in having the appearance or characteristics of without attempt to deceive or delude : IMITATE, COPY (fiction that seeks to ~ reality —Bernard De Voto) b : to imitate fraudulently : copy with intent to deceive : make a fraudulent copy or replica of (something of value, as a coin, bill, note, or signature) (a gang *~ing* $50 bills) 4 a *archaic* : to use as a model : seek to imitate : EMULATE b *obs* : to cause to have a false or misleading appearance : DISGUISE — *vi* 1 : to try to deceive by pretending or dissembling : SIMULATE, FEIGN 2 : to practice counterfeiting of valuables (held on charges of *~ing*) syn see ASSUME

²counterfeit \"\ *adj* [ME *countrefet*, fr. MF *contrefait*, past part. of *contrefaire* to imitate, draw, paint, fr. *contre-* counter- + *faire* to make, fr. L *facere* — more at DO] 1 a : SPURIOUS : not genuine or authentic; *esp* : not composed by the author indicated or under the circumstances ascribed (a ~ gospel rejected as *apocryphal*) b : made in fraudulent imitation : produced with intent to deceive : FORGED (a ~ diamond made of paste); *esp* : made fraudulently in imitation of a government issue (a ~ stamp) (a ~ bill) 2 a : FEIGNED : assumed with calculation to mislead (a ~ joy at her friend's engagement) b : marked by false pretense : SHAM, PRETENDED (an impostor, a ~ prince) 3 *archaic* : represented in a picture or by means of a picture : PORTRAYED (look here upon this picture and on this, the ~ presentment of two brothers —Shak.)

SYN SPURIOUS, BOGUS, FAKE, SHAM, PSEUDO, PINCHBECK, PHONY: COUNTERFEIT applies to something made or fabricated in quite close imitation of something else, esp. to something genuine or original and with intent to deceive (a *counterfeit* coin) (a *counterfeit* passport) (the austere word of genuine religion is: save your soul! The degenerate counsel of a *counterfeit* religion is: salve your soul —W.L.Sullivan) SPURIOUS applies to what is not genuine, authentic, or true without necessarily implying fraudulent purpose or deceiving imitation (the French look on us English monk-made knights as *spurious* and adulterine, unworthy of the name of knight —Charles Kingsley) (it is certain that the letter, attributed to him, directing that no Christian should be punished for being a Christian, is *spurious* —Matthew Arnold) BOGUS is likely to imply fraud, imposture, or deception, sometimes self-deception (in red cambric and *bogus* ermine, as some kind of king —Mark Twain) (*bogus* naturalization of immigrants and repeating at elections were now carried to hitherto unknown lengths —A.F.Harlow) (nostalgia can be the trickiest of maladies. It invests the past with bogus glamour —W.C. Richards) FAKE implies a false fabrication or fraudulent manipulation (a *fake* ruby) (a *fake* cure-all) (another source of quick money was selling life memberships in *fake* yacht clubs —Alva Johnston) (any Americans who cling to illusions about communism and its *fake* Utopia —A.E.Stevenson b.1900) SHAM may suggest thinness and obviousness of the disguise, naiveté of the deception, or lack of intent to imitate exactly (a garden adorned with *sham* ruins and statues —L.P.Smith) (he [Euripides] looked at war and he saw through all the *sham* glory to the awful evil beneath —Edith Hamilton) (not one officer among them whose experience of war extended beyond a drill on muster day and the *sham* fight that closed the performance —Francis Parkman) PSEUDO (often appearing as a combining form) may apply to either pretentious, spurious imitation or to imitation to deceive (the cottage seemed very small and horribly 'arty-crafty'. 'Everything looks so *pseudo*,' said Lucy —Frances Towers) (those democrats who wholeheartedly are democrats and not *pseudo*-democrats —*Fortnightly*) (these *pseudo*-evangelists pretended to inspiration —Thomas Jefferson) PINCHBECK may apply to a cheap imitation, often to a poor copy of something costly or grand (*pinchbeck* imitations of the glory of ancient Rome —*Manchester Guardian Weekly*) (greater numbing could afford the *pinchbeck* splendor of organizations like the Colonial Order of the Crown —J.D.Hart) PHONY, more forceful than most in this group, stigmatizes anything spurious or the *phony* aura of romance which travel bureaus are wont to attach to the West Indies —Gladwin Hill) (the Germans were deceiving us at that very moment with a *phony* show of strength —F.E.Fox)

³counterfeit \"\ *n* -S [ME *countrefet*, fr. *countrefet*, adj.] 1 a : an imitation or replica markedly close or faithful to an original and typically made to deceive for gain (the $10 bill passed out to be a ~) b : a close approximation likely to be confused with reality or with the genuine (that temporary ~ of fame which is publicity —Irwin Edman) 2 *archaic* : a representation, counterpart, or picture : an art work closely similar to its subject (fair Portia's ~ —Shak.) 3 *archaic* : PRETENDER, IMPOSTOR syn see IMPOSTURE

coun·ter-feit-er \ˈ=ə,fid-ə(r), -fēt-, -fēt-\ *n* -S [ME *countrefeter*, fr. *countrefeten* + *-er* -er] : one that forges or makes fraudulent imitations of currency; *also* : one that copies or imitates with either good or bad intent

coun·ter-feit-ly *adv* : in a counterfeit manner : by use of counterfeits

coun·ter-feit-ness *n* -ES : the quality or state of being counterfeit

coun·ter-flashing \ˈkauntə(r) +ˌ-\ *n* [*counter-* + *flashing* (metal strips)] : a strip of sheet metal in the form of an inverted L built into a vertical wall of masonry and bent down over the flashing to make it watertight

coun·ter-flood \ˈ=ə +\ *vt* [*counter-* + *flood*] : to flood compartments in (a ship) to counterbalance listing and loss of trim resulting esp. from already flooded compartments

coun·ter-flory *also* **coun·ter-fleury** \ˈ=ə +\ *adj* [part trans. of MF *contrefleuri*, fr. *contre-* counter- + *fleuri* fleury — more at FLEURY] *heraldry* : flory on opposite sides so that the middles of the flowers are apparently covered by a part of the charge — used of an ordinary

coun·ter-flow \" +ˌ-\ *n* [*counter-* + *flow*] : flow in opposite directions or the opposite direction — used esp. of fluids in adjacent parts of an apparatus (as a heat exchanger)

coun·ter-foil \ˈkauntə(r) +ˌ-\ *n* -S [*counter-* + *foil*] : a form giving main particulars of something treated in more detail on another and detachable form : a detachable stub usu. serving as a record or receipt (as on a check or ticket)

coun·ter-force \" +ˌ-\ *n* [*counter-* + *force*] : a force, power, activity, or trend that opposes or counters another

coun·ter-fort \" +ˌ-\ *n* -S [part trans. of MF *contrefort*, fr. *contre-* counter- + *fort* strength, force, fr. *fort*, adj., strong — more at SHORT] 1 : a buttress built against or integral with a wall (as a retaining wall or dam) but on the back or thrust-receiving side

coun·ter-fugue \" +ˌ-\ *n* [trans. of F *contre-fugue*] : a fugue in which the answer is an inverted imitation of the subject

coun·ter-gambit \" +ˌ-\ *n* [*counter-* + *gambit*] : a chess gambit offered by the second player

counter game *n* [*counter*] : any of various games usu. played with dice on a store counter in which a customer attempts to win a prize

coun·ter-gauge *or* **coun·ter-gage** \ˈkauntə(r)+ˌ-\ *n* [*counter-* + *gauge*, *gage*] : an adjustable gauge with double points for transferring measurements from one piece of lumber to another

coun·ter-girl \" +ˌ-\ *n* [*counter-* + *girl*] : a girl counterman

coun·ter-glow \" +ˌ-\ *n* [*counter-* + *glow*; trans. of G *gegenschein*] : GEGENSCHEIN

coun·ter-guard \" +ˌ-\ *n* [part trans. of MF *contre-garde*, fr. *contre-* counter- + *garde* guard, fr. OF *guarde* — more at GUARD] : an outwork protecting from a breaching fire the faces of a bastion, ravelin, or similar work

counter hoop *n* [*²counter*] : the outer hoop that clamps and tightens a drumhead

countering *pres part of* COUNTER

coun·ter-intelligence \ˈkauntər+\ *n* [*counter-* + *intelligence*] : organized activity of an intelligence service designed to block an enemy's sources of information by concealment, camouflage, censorship, and other measures, to deceive the enemy by ruses and misinformation, to prevent sabotage, and to gather political and military information

coun·ter-ion \ˈkauntə(r) +ˌ-\ *n* [*counter-* + *ion*] : an ion having a charge opposite to that of the substance with which it is associated (as in an electric double layer)

¹coun·ter-irritant \ˈ=ə+ˌ-\ *n* [*counter-* + *irritant*] : an agent applied locally to produce superficial inflammation with the object of reducing inflammation in deeper adjacent structures (as a mustard plaster applied to the chest in bronchitis); *broadly* : an additional irritation or discomfort that diverts attention from another

²counterirritant \"\ *adj* : having the properties of a counterirritant : dealing with or marked by counterirritants

coun·ter-irritate \ˈkauntər +ˌ-\ *vt* [*counter-* + *irritate*] : to irritate as an offset to adjacent inflammation : treat with counterirritants — **coun·ter-irritation** \"+ˌ-\ *n*

count-er-jumper \ˈkaunt(ə)r +ˌ-\ *n* [*counter* + *jumper*] : a store clerk

¹coun·ter-lath \"+ˌ-\ *n* [*counter-* + *lath*] 1 : a batten laid lengthwise between two rafters to afford a bearing for laths laid crosswise 2 : any lath laid without actual measurement between two gauged laths 3 : any of a series of laths nailed to the timbers to raise the sheet lathing above their surface to afford a key for plastering 4 : one of many laths used in preparing one side of a partition or framed wall when the other side has been covered in and finished

²counterlath \"\ *vt* : to furnish with counterlaths

coun·ter-lode \ˈkauntə(r) +ˌ-\ *n* [*counter-* + *lode*] : CROSS LODE

count-er-man \ˈkaunt(ə)r,man, -ˌmən(s)n *also* -ˌmən\ *n*, *pl* **countermen** [*counter* + *man*] 1 : one that tends a counter; *specif* : one that serves food over the counter of a cafeteria or lunchroom 2 : a worker in a laundry or cleaning and dyeing establishment 3 : one that sells or directs the sale of automobile parts; *sometimes* : a manufacturer's representative 4 : a clerk in charge of stockroom supplies

¹coun·ter-mand \ˈkauntə(r),mand, -ˌmaa(ə)nd,-ˌmänd, ˌ=ə+\ *vt* -ED/-ING/-S [ME *countermaunden*, fr. MF *contremander*, fr. *contre-* counter- + *mander* to command, fr. L *mandare* — more at MANDATE] 1 : to revoke (a former command) : cancel or rescind (an order) by giving a contrary order (~ an order for goods) 2 : to recall or order back by a superseding contrary order (~ reinforcements) 3 : to stop or prohibit by revoking an order or issuing a contrary order (~ a payment) 4 *obs* a : to oppose or go counter to a command of b : FRUSTRATE, COUNTERACT

UNIT OPERATIONS OF CHEMICAL ENGINEERING

Fourth Edition

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A second example of simple heat-transfer equipment is the double-pipe exchanger shown in Fig. 11-3. It is assembled of standard metal pipe and standardized return bends and return heads, the latter equipped with stuffing boxes. One fluid flows through the inside pipe and the second fluid through the annular space between the outside and the inside pipe. The function of a heat exchanger is to increase the temperature of a cooler fluid and decrease that of a hotter fluid. In a typical exchanger, the inner pipe may be $1\frac{1}{4}$ in. and the outer pipe $2\frac{1}{2}$ in., both IPS. Such an exchanger may consist of several passes arranged in a vertical stack. Double-pipe exchangers are useful when not more than 100 to 150 ft^2 of surface is required. For larger capacities, more elaborate shell-and-tube exchangers, containing up to thousands of square feet of area, and described on pages 383 to 386, are used.

Countercurrent and parallel-current flows The two fluids enter at different ends of the exchanger shown in Fig. 11-3 and pass in opposite directions through the unit. This type of flow is that commonly used and is called *counterflow* or *countercurrent flow*. The temperature-length curves for this case are shown in Fig. 11-4*a*. The four terminal temperatures are denoted as follows:

Temperature of entering hot fluid, T_{ha}
Temperature of leaving hot fluid, T_{hb}
Temperature of entering cold fluid, T_{ca}
Temperature of leaving cold fluid, T_{cb}

The approaches are

$$T_{ha} - T_{cb} = \Delta T_2 \qquad \text{and} \qquad T_{hb} - T_{ca} = \Delta T_1 \tag{11-1}$$

The warm-fluid and cold-fluid ranges are $T_{ha} - T_{hb}$ and $T_{cb} - T_{ca}$, respectively.

If the two fluids enter at the same end of the exchanger and flow in the same direction to the other end, the flow is called *parallel*. The temperature-length curves

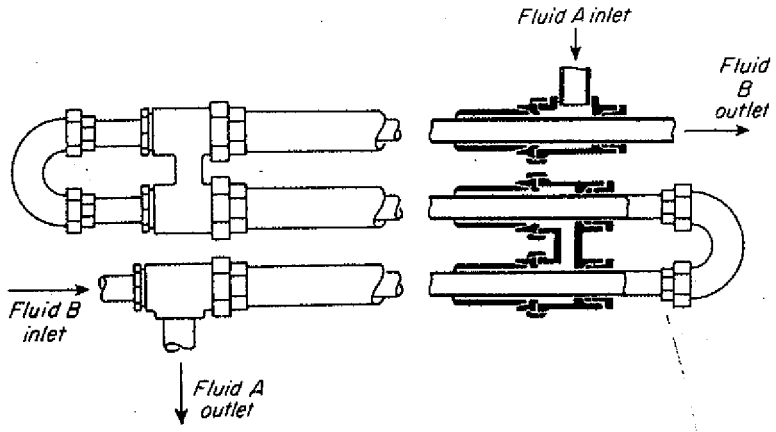

Figure 11-3 Double-pipe heat exchanger.

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Richard J. Lewis, Sr.

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assuming the charge on contact and then moving to the wall of the stack, where they are electrically discharged and precipitated.

couch roll. (Pronounced cooch.) A hollow suction roll on a fourdrinier paper machine over which the formed sheet or web passes as it leaves the wire. The suction is provided by a vacuum or suction box inside the roll, whose face is perforated to offer as large a vacuum area as possible. The chief feature of the couch roll is its great water-removing capacity; this gives the sheet enough strength to enable it to hold together as it passes to the pickup felts.

coumaphos. Generic name for *O,O*-diethyl-*O*-(3-chloro-4-methyl-2-oxo-2*H*-1-benzopyran-7-yl)-phosphorothioate.
CAS: 56-72-4. $C_9H_3O_2(CH_3)ClOPS(OC_2H_5)_2$.
Properties: Crystals. Mp 91C. Insoluble in water; soluble in aromatic solvents.
Hazard: Use may be restricted; cholinesterase inhibitor.
Use: Insecticide, anthelmintic.

coumarin. (cumarin; benzopyrone; tonka bean camphor).
CAS: 91-64-5. $C_9H_6O_2$. A lactone.
Properties: Colorless crystals, flakes, or powder; fragrant odor similar to vanilla; bitter, aromatic burning taste. Mp 69C, bp 290C. Soluble in 10 vols of 95% alcohol and in ether, chloroform, and fixed volatile oils; slightly soluble in water. Combustible.
Derivation: (1) By heating salicylic aldehyde, sodium lactate, and acetic anhydride; (2) fine grades are isolated from tonka beans.
Hazard: Toxic by ingestion; carcinogenic. Use in food products prohibited (FDA).
Use: Deodorizing and odor-enhancing agent, pharmaceutical preparations.

coumarone. (benzofuran).
CAS: 271-89-6. C_8H_6O. A bicyclic ring compound derived from coal tar naphtha, the parent substance of coumarone-indene resins.
Properties: Colorless, oily liquid. D 1.09, bp 165 to 175C. Insoluble in water.

coumarone-indene resin. A thermosetting resin derived by heating a mixture of coumarone and indene with sulfuric acid, which induces polymerization. It is soft and sticky at room temperature; it hardens on heating to a resinous solid. Soluble in hydrocarbon solvents, pyridine, acetone, carbon disulfide, and carbon tetrachloride; insoluble in water, alcohol. Combustible. Said to have been the first synthetic polymer.
Use: Adhesives, printing inks, floor-tile binder, friction tape.
See "Cumar"; "Nevindene"; "Paradene."

count. (1) The external indication given by a radiation detector, such as a Geiger counter, of the amount of radioactivity to which the detector is exposed. The background counts are those that come from a source external to that being measured. (2) The number of warp and filler threads in a linear inch of a textile fabric, e.g., the count of a sheeting may be 80 x 60.

countercurrent. Descriptive of a process in which a liquid and a vapor stream, or two streams of immiscible liquids, or a liquid and a solid are caused to flow in opposite directions and past or through one another with more or less intimate contact so that the individual substances present are more or less completely transferred to that stream in which they are more soluble or stable under the conditions existing. The streams leaving such a process are usually of higher purity than can be attained otherwise at equal cost. Distillation with a fractionating column is also a typical countercurrent process, in which rising vapor is purified by contact with descending liquid (reflux). Leaching, washing, and chemical reaction are frequently carried out in a countercurrent manner.
See liquid-liquid extraction.

coupling. (1) The combination of an amine or phenol with a diazonium compound to give an azo compound, the reaction by which azo dyes are prepared. Thus *m*-phenylenediamine $C_6H_4(NH_2)_2$ couples with benzene diazonium chloride $C_6H_5N_2Cl$ to produce the dye chrysoidine $C_6H_3N_2C_6H_3(NH_2)_2$.
See azo-dye intermediate. (2) Oxidative coupling. (3) An agent, e.g., a vinyl silane, used to protect fiberous glass laminates from effects of water absorption. (4) A condensation polymerization of amino acids to form proteins; it can be done synthetically only by suppressing certain active sites on the amino acid molecules.

covalent bond. (homopolar). Sharing of electrons by a pair of atoms.
See bond, chemical.

covering power. See opacity.

Cowles process. The direct manufacture of aluminum alloys, such as copper aluminum, from aluminum ores by reacting with carbon in an electric furnace in the presence of the alloying metal.

Cox chart. A special semilogarithmic plot of vapor pressure versus temperature especially useful for the petroleum hydrocarbons. The graph corresponding to each separate hydrocarbon is a straight line. All the lines appear to intersect at a point outside the chart.

CP. Abbreviation for chemically pure, an accepted grade of drugs and fine chemicals that contain a minimum of impurities.
See chemically pure.